

**Abstract of the Disclosure**

The inventive cryogenic fluid pumping system comprises at least one cryogenic fluid tank (8a, 8b), a cryogenic pump (18) having an input friction loss (NPSH) and a suction line (23a, 23b) connecting said tank (8a, 8b) to said pump (18). According to the invention, the pumping system comprises pressure control means for maintaining pressure in the suction line (23a, 23b) in such a way that said pressure is equal to or higher than an increased cryogenic fluid saturation pressure and the input friction loss (NPSH) of the cryogenic pump (18). Said invention can be used for pumping low-dense cryogenic fluids.